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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,188	11/17/2003	Jin Li	M4065.0978/P978	9559

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EXAMINER	
OLSEN, ALLAN W	
ART UNIT	PAPER NUMBER
1763	

MAIL DATE	DELIVERY MODE
07/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/713,188	LI, JIN	
	Examiner	Art Unit	
	Allan Olsen	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-60* is/are pending in the application.

4a) Of the above claim(s) *5,7-26,28,42-45,47 and 55-60* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,27,29-41,46 and 48-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 29, 2007 has been entered.

Election/Restrictions

Claims 5, 7-26, 28, 42-45, 47 and 55-60 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the election requirement in the reply filed on.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6, 27, 29-33, 35-41, 46, 48-52 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 329 432 A1 (hereinafter, Tsunetomo).

Tsunetomo teaches forming a mold for micro-lenses by etching a multilayered substrate wherein the different layers have differing etch rates. See paragraphs 41-50 and 55-60.

Tsunetomo does not teach using a first etchant and a second etchant.

It would have been obvious to one skilled in the art to use two etchant because in the first step of Tsunetomo, only one material is being etched and the etching rate ratio between the two layers is not an important consideration until both layers are exposed. Therefore, to maximize the efficiency of the process, the skilled artisan would be motivated to select an etchant for the first step that would provide the fastest etch rate of the first layer rather than on the basis of the relative etching rates between two layers.

Tsunetomo does not teach that the first layer is a layer of Silane PECVD, and the at least one second layer is a layer of borophosphosilicate glass (3.8/6.9) WJ RTP and anneal, while the substrate is TEOS PECVD densified, and the etchant is about ten percent hydrogen fluoride by volume in distilled water.

It would have been obvious to one skilled in the art to appropriately change and optimize the composition of the Tsunetomo's various layers so that the various etching rates would produce a mold having the desired shape. As noted by applicant:

> [0020] As is known in the art, the way in which a material is formed can affect the rate at which a particular etchant will etch the material. For example, as shown in FIG. 10, a borophosphosilicate glass (BPSG), which is about 2.7 percent boron by weight and 7.2 percent phosphorus by weight, material deposited in a Watkins-Johnson machine (WJ) using a rapid temperature process (RTP) and anneal is etched at a rate of about 242 Angstroms/minute (A/min) by a solution of one percent by volume hydrogen fluoride in distilled water (HF 100:1), whereas a BPSG densified material, which is about 3.0 percent boron by weight and 7.6

> percent phosphorus by weight, deposited in a Centura machine is etched by the same etchant at a rate of 1130 A/min. Thus, a BPSG (2.7/7.2) WJ RTP and anneal material is different than a BSPG (3.0/7.6) Centura densified material. For simplicity, the weight percents of boron and phosphorus in a BPSG material are indicated herein by the following notation: (weight percent boron/weight percent phosphorus).

Claims 34 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsunetomo, as applied to claims 1 and 38 above, in view of US Patent 5,708,493 issued to Ahsbahs et al. (hereinafter, Ahsbahs).

Tsunetomo does not teach forming inorganic lenses by filling the mold with inorganic lens material.

Ahsbahs teaches that the molding technique is used to create lenses made from both organic and inorganic materials (column 8, lines 38-39).

It would have been obvious to one skilled in the art to use the mold of Tsunetomo to make inorganic lenses because Ahsbahs teaches that molding may be used to make inorganic lenses, which are known to be more scratch resistant than their organic counterpart. Also, because Tsunetomo's mold is made from inorganic material it could withstand the processing conditions used for inorganic lenses.

Response to Arguments

Applicant's arguments filed May 29, 2007 have been fully considered. Applicant argues:

> Although Tsunetomo discloses the use of "[v]arious etching means," and the use of hydrofluoric acid at various concentrations, Tsunetomo does not disclose "forming a first opening in the first layer using a first etchant" and "providing a second etchant in the first opening to etch both the substrate and the first layer to form a first mold for a first micro-lens" as recited by claim 1. (column 8, lines 50-57; column 10, lines 24-35). That is to say, Tsunetomo only teaches using hydrofluoric acid at one concentration or one etching means in the descriptions and examples disclosed by Tsunetomo. (column 8, lines 50-57; column 10, lines 24-35).

This argument is persuasive with respect to overcoming the rejection of the independent claims under 35 USC 102. However, for the reason stated in the above rejection, these claims are now deemed obvious over Tsunetomo.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is 571-272-1441. The examiner can normally be reached on M, W and F: 1-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allan Olsen
Primary Examiner
Art Unit 1763